

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
13 January 2005 (13.01.2005)

PCT

(10) International Publication Number
WO 2005/003808 A1

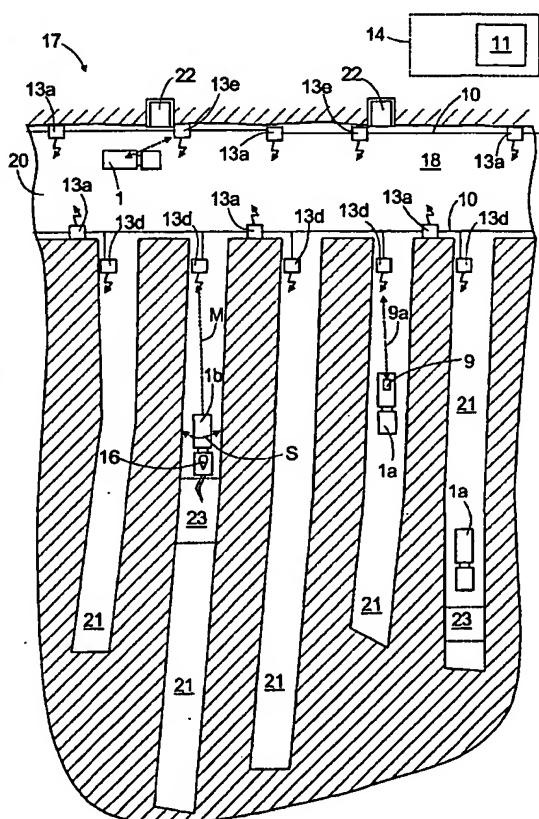
- (51) International Patent Classification⁷: G01S 5/02,
G05D 1/02
- (21) International Application Number:
PCT/FI2004/000391
- (22) International Filing Date: 28 June 2004 (28.06.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
20031007 3 July 2003 (03.07.2003) FI
- (71) Applicant (*for all designated States except US*): SANDVIK TAMROCK OY [FI/FI]; Pihtisulunkatu 9, FI-33330 Tampere (FI).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): MÄKELÄ, Hannu
- [FI/FI]; Repovuorentie 7 B D, FI-00670 Helsinki (FI). PULLI, Riku [FI/FI]; Korvenkatu 81 F 11, FI-33300 Tampere (FI). SOIKKELI, Timo [FI/FI]; Vuorikuja 13, FI-33960 Pirkkala (FI).
- (74) Agent: KOLSTER OY AB; Iso Roobertinkatu 23, P.O.Box 148, FI-00121 Helsinki (FI).
- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH,

[Continued on next page]

(54) Title: METHOD AND SYSTEM FOR MONITORING LOCATION OF MINING VEHICLE



WO 2005/003808 A1



(57) Abstract: The invention relates to a method and a system for monitoring the location of a mining vehicle in a mine. The first mine section (18) is provided with a wireless network (10) for data transmission between the mining vehicle (1, 1a, 1b) and the mine control system (11). In addition, the network is used for positioning. In the second mine section (21), the location is determined by means of measuring devices provided in the mining vehicle.



GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— of inventorship (Rule 4.17(iv)) for US only

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,

Published:

- with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.